Great Basin Cooperative Ecosystem Studies Unit
Task Agreement
National Park Service

TASK AGREEMENT NO.:	COOPERATIVE AGREEMENT NO.:	EFFECTIVE DATES:
J8R07060014	H8R07060001	9/1/2006-11/30/2007

COOPERATOR: Board of Regents, Nevada System of Higher Education (NSHE) on behalf of the University of Nevada, Reno

PROJECT TITLE: Development of a Study to Address the Impact of Reinstatement of Livestock Wells on Mule Deer and Vegetation in Mojave National Preserve

FISCAL YEAR FUNDING: 2006 **ACCOUNT #:** 8381-1001-NZY (411C) **NOT TO EXCEED**: $30,000

PROJECT ABSTRACT: Plan and initiate a long-term study of mule deer demography and genetics, including response to artificial water developments within the Mojave National Preserve. It is envisioned that the long-term study will include reactivation of at least four existing wells, originally for livestock, and assessing the response of game and non-game animals and vegetation to this reactivation.

SCOPE OF WORK: See attached.

Unless otherwise provided herein, the terms and conditions of H8R07060001 apply to this Task Agreement.

Board of Regents
Nevada System of Higher Education
on behalf of the University of Nevada, Reno

/s/ Cindy Kiel

Cindy Kiel, J.D. CRA
Director of Sponsored Projects

8/28/06

Date

NATIONAL PARK SERVICE
PACIFIC WEST REGIONAL OFFICE

/s/ Theresa A. Fisher

Theresa A. Fisher
Contracting Officer

8/22/06

Date

TASK AGREEMENT NO. J8R07060014

Development of a Study to Address the Impact of Reinstatement of Livestock Wells on Mule Deer and Vegetation in Mojave National Preserve

This Task Agreement by and between the National Park Service (NPS) and the University of Nevada, Reno (UNR) is issued against the Great Basin Cooperative Ecosystem Studies Unit Cooperative and Joint Venture Agreement, H8R07060001, for the purpose of mutual assistance in conducting a project entitled "Development of a Study to Address the Impact of Reinstatement of Livestock Wells on Mule Deer and Vegetation in Mojave National Preserve". Unless otherwise provided herein, the terms and conditions of H8C07060001 apply to this Task Agreement.

ARTICLE I – BACKGROUND AND OBJECTIVES

Mojave National Preserve (MOJA) bounds a significant portion of the Eastern Mojave Desert ecoregion and encompasses probably the most significant habitat for mule deer (*Odocoileus hemionus*) in the California deserts. Six big game guzzlers (wildlife water catchments) were constructed in the area around the mid-20th century that now supports an important population of desert bighorn sheep (*Ovis canadensis nelsonii*). Also 133 small game guzzlers (gallinaceous bird guzzlers) are scattered around the Preserve. Surveys in 2002 and 2003 located approximately 100 natural seeps, many of which have been historically diverted to livestock troughs. California Department of Fish and Game approached the NPS in 2004 with a proposal to convert 12 former livestock wells to guzzlers, primarily for mule deer. These wells were abandoned from 2001 to 2003 following retirement of grazing allotments.

Water developments have benefited some wildlife populations in desert regions but there have been few studies examining the ecological effects of wildlife water developments. Much of the information regarding response of game species is anecdotal, derived from research designed to address other issues, or compromised by various study design weaknesses. MOJA is cooperating with the UNR in designing and conducting long-term studies involving experimental manipulation of artificial water developments.

In March of 1948, California Department of Fish and Game introduced 40 mule deer (*Odocoileus hemionus*), nine bucks and 31 does into the New York and Providence Mountains to augment existing populations, and allowed hunting of this population starting in 1955. Buck kill data from 1959 through 2005 show an average of 31 reported kills annually, with a maximum of 67 reported in 2000. California Department of Fish and Game sells 500 permits each year for this zone but does not collect demographic or habitat data other than reported buck kills because the mule deer density and harvest are too low.

Mule deer habitat in MOJA, roughly the zone above 4000 feet elevation, connects the New York and Providence Mountains to the historical range of mule deer in the Spring Mountains through Potosi, Clark Mountain, Ivanpah, and Cima Dome. Mule deer may have existed in the Providence – New York Mountains prior to 1948, according to anecdotal evidence, but may now be isolated by the Interstates. Over the course of about five years, starting in 1999, approximately 4,000 burros were removed and about 6,000 livestock grazing units were retired. Since establishment of the Preserve, annual buck kill data show a slight upward trend, however some long-time residents in the area have reported recent declines in mule deer and other wildlife populations. Reduced grazing pressure, dramatic differences in annual precipitation, loss of water distribution systems for livestock, and other unknown factors may have affected populations.

MOJA is cooperating with the UNR to design and conduct a study of mule deer demographics and genetics including population size, trends, genetics, distribution, range, habitat conditions, and meta-populations. Specific objectives of this task agreement are to: (1) identify key management issues associated with reinstatement of 12 livestock wells with respect to mule deer and other wildlife; (2) develop testable hypotheses that address management issues identified in (1); (3) analyze, in collaboration with California Department of Fish and Game, existing data on wildlife-vegetation relationships in MOJA; and (4) develop a full proposal to submit for funding a study to address hypotheses identified in (2).

ARTICLE II – STATEMENT OF WORK

A. The UNR will:

1. Collaboratively undertake a project titled "Development of a Study to Address the Impact of Reinstatement of Livestock Wells on Mule Deer and Vegetation in Mojave National Preserve".
2. Appoint Dr. Jim Sedinger as Principal Investigator (PI).
3. Collaborate with MOJA staff and California Department of Fish and Game in identification of key wildlife management issues associated with reactivation of livestock wells on the Preserve. This will be accomplished through an on-site field visit to the MOJA and meeting of cooperators.
4. Work with NPS in preparing a written document describing the agreed to management issues/questions for study and their priority.
5. Work with NPS MOJA staff in agreeing to the scientific approach for addressing the identified management questions, prior to proposal preparation.
6. Analyze, in collaboration with California Department of Fish and Game, existing data on wildlife-vegetation relationships in MOJA. Results will be summarized in a MS Word document.
7. As feasible, initiate demographic and other pre-project field work to support the proposal being developed. Field work in part may pilot test design and methods for final proposed project. Document work accomplished in a project report. UNR will submit protocols for capture and handling of animals for review by the University of Nevada Reno Institutional Animal Use and Care Committee prior to conducting field work.
8. Develop a draft comprehensive multi-year study proposal/plan addressing the key management issues agreed to during the on-site visit. This proposal will comply with content and format requirements for NPS Natural Resource Protection Program (NRPP). If necessary, divide the proposed research work into two or three separate proposals. Additional proposals, if needed, would cover (1) population genetics of mule deer and (2) nongame species. Proposed research will be structured to support at least one graduate student.
9. Incorporate NPS review comments into a final submittal ready version of the NRPP proposal.
10. Fully acknowledge the NPS in any published or formally presented material developed or derived from this Task Agreement.
11. Collaborate with NPS, as appropriate, in a 60-day wrap-up period following the due date of the last project product.

B. The NPS will:

1. Provide financial assistance to the UNR as provided in Article V. The Budget, included as Attachment II is incorporated in this Task Agreement.
2. Assign Dr. Debra Hughson, MOJA Science Advisor as the Agreement Technical Representative (ATR).
3. Collaborate with UNR and California Department of Fish and Game in identification of key wildlife management issues associated with reactivation of livestock wells on the Preserve. This will be accomplished through an on-site field visit to the MOJA.
4. Work with UNR in preparing a written document describing the agreed to management issues/questions for study and their priority.
5. Work with UNR in agreeing to the general scientific approach for addressing the identified management questions, prior to proposal preparation.
6. Provide UNR with NRPP proposal format and content requirements, and assist UNR with meeting these requirements.
7. Review and provide comment on the draft study proposal(s) prepared by UNR.
8. Perform all well retrofitting including installation of systems, plumbing, tanks, drinkers, and maintenance.
9. Provide local project coordination.
10. Provide required permits.
11. Provide staff for assisting with data collection.
12. Fully acknowledge the UNR in any published or formally presented material developed or derived from this Task Agreement.
13. Collaborate with UNR, as appropriate, in a 60-day wrap-up period following the due date of the last project product.

ARTICLE III – TERM OF AGREEMENT

This Task Agreement is effective on September 1, 2006 and will extend through November 30, 2007.

ARTICLE IV – KEY OFFICIALS

A. For NPS

Dr. Debra Hughson (ATR)
Science Advisor
Mojave National Preserve
2701 Barstow Road
Barstow, CA 92311
Phone: 760-252-6105
Email: debra_hughson@nps.gov
Fax: 760-252-6174

B. For UNR

Dr. Jim Sedinger (PI)
University of Nevada Reno
1000 Valley Road/MS 186
Reno, NV 89512
Phone: 775-784-6556
Email: jsedinger@cabnr.unr.edu
Fax: 775-784-4583

ARTICLE V – AWARD AND PAYMENT

A. NPS will provide financial assistance on a reimbursable basis to the UNR in an amount not to exceed $30,000. The chargeable appropriation for this Task Agreement is: 8381-1001-NZY.

B. Standard Form (SF) 270, Request for Advance or Reimbursement, must be submitted for payment to the Contracting Officer at the convenience of UNR, but no more frequently than monthly or less frequently than annually. The request for reimbursement shall be accompanied by a breakdown sheet showing cost in each budgetary item and shall be addressed to:

National Park Service
Pacific West Regional Office
1111 Jackson St., Ste. 700
Oakland, CA 94607
Attn: Theresa Fisher

C. Payment will be made via electronic funds transfer directly to the UNR's account at their financial institution.

ARTICLE VI – PROJECT PRODUCTS AND SCHEDULE

A reconnaissance field visit and preliminary assessment will be completed by December 31, 2006. This field visit will include at a minimum Dr. Jim Sedinger and Dr. Debra Hughson.

A summary of analysis of existing data from Mojave National Preserve will be completed in cooperation with California Department of Fish and Game by May 31, 2007.

The existing data analysis will provide a basis for documenting key management questions and provide a framework for an overarching research approach. Documentation of key wildlife management issues associated with reactivation of livestock wells will be completed by May 31, 2007.

A draft research proposal and detailed study plan will be completed by July 31, 2007. The detailed, comprehensive study plan of the biological and ecological effects of artificial water developments will include hypotheses, experimental design, statistical analyses of errors, and a detailed budget.

A final research proposal and detailed study implementation plan, incorporating responses to reviewer's comments, from both NPS and CDFG, will be completed by September 30, 2007. This will include a proposal formatted for competition in the Natural Resource Protection Program, Resource Management fund.

One copy of the final research proposal will be submitted in hard copy and electronic to the NPS Great Basin CESU Research Coordinator at the following address: Great Basin CESU, University of Nevada, 1000 Valley Road, Reno, NV 89512

A. Schedule/Milestones/Dates

1. Summary report on analysis of existing data completed by May 31, 2007
3. Documentation of key wildlife management issues will be completed by May 31, 2007
4. A draft research proposal and detailed study plan will be completed by July 31, 2007
5. A final research proposal and detailed implementation plan to be completed by September 30, 2007
6. A proposal formatted for competition in the NRPP-RM fund completed by September 30, 2007

ARTICLE VII – LIABILITY

Each party accepts responsibility for any property damage, injury, or death caused by the acts or omissions of their respective faculty, students, employees, or other representatives arising under this Task Agreement, to the fullest extent permitted by law.

ARTICLE VIII – ATTACHMENTS

I. Budget

Attachment 1. Budget

Budget for Preparing Mojave Desert Mule Deer Proposals
University of Nevada, Reno (09/01/06 to 09/30/07)

Salary and Benefits	
Technician	9,000
Benefits	3,600
Total Salary and Benefits	12,600
Travel	1,332
Supplies	
10 VHF radio collars $200 each	2,000
Services	
12 hours helicopter time $800/hr	9,600
Total Direct costs	25,532
Indirect Costs (17.5%)	4,468
Total	30,000

Budget Justification

Technician will assist with analysis of existing California Department of Fish and Game vegetation and food habits data for Mohave National Preserve. Travel cover visits to the field site for planning, meeting with National Park Service and California Department of Fish and Game staff, and proposal preparation. Helicopter time is for capturing the small sample of deer (10 deer) for the pilot effort funded by this task order. Radios would be applied to the sample of 10 deer following capture.